



DS2404S-C01

Dual Port Memory Plus Time

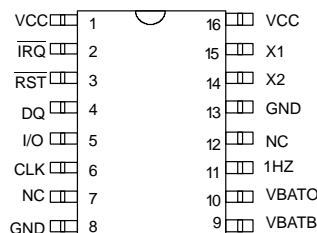
FEATURES

- Bridge for electronic equipment to the 1-Wire Micro-LAN
- 4096 bits of nonvolatile dual-port memory including real time clock/calendar in binary format, programmable interval timer, and programmable power-on cycle counter
- 1-Wire interface for MicroLAN communication at 16.3k bits per second
- 3-Wire host interface for high-speed data communications at 2M bits per second
- Unique, factory-lasered and tested 64-bit registration number (8-bit family code + 48-bit serial number + 8-bit CRC tester) assures absolute traceability because no two parts are alike
- Memory partitioned into 16 pages of 256-bits for packetizing data
- 256-bit scratchpad with strict read/write protocols ensures integrity of data transfer
- Programmable alarms can be set to generate interrupts for interval timer, real time clock, and/or cycle counter
- Space saving 16-pin SOIC package
- Operating temperature range from -40°C to $+85^{\circ}\text{C}$
- Operating voltage range from 2.8 to 5.5 Volts

DESCRIPTION

In order to provide universal access to the MicroLAN, the DS2404S-C01 Dual Port Memory Plus Time has been developed. This device has both 1-Wire and a 3-Wire serial microcontroller interface. The DS2404S-C01 can be used to make complex functions involving microcontrollers behave as if they were iButtons.

PIN ASSIGNMENT



16-PIN SOIC (300 MIL)
See Mech. Drawings
Section

PIN DESCRIPTION

Pin #	Pin Name	Description
Pin 1&16	$-V_{CC}$	2.8 to 5.5 Volts
Pin 2	$-\overline{IRQ}$	Interrupt Output
Pin 3	$-\overline{RST}$	3-Wire Reset Input
Pin 4	$-DQ$	3-Wire Input/Output
Pin 5	$-I/O$	1-wire Input/Output
Pin 6	$-CLK$	3-Wire Clock Input
Pin 7 & 12	$-NC$	No Connection
Pin 8 & 13	$-GND$	Ground
Pin 9	$-V_{BATB}$	Battery Backup Input
Pin 10	$-V_{BATO}$	Battery Operate Input
Pin 11	-1 Hz	1 Hz Output
Pin 14 & 15	$-X_1, X_2$	Crystal Connections

Being a custom-ROM version of the DS2404, the DS2404S-C01 has the family code 84H. In addition to this, the 12 most significant bit of the serialization field are coded 001H, leaving 28 bits for serialization. The communication with the DS2404S-C01 through the 1-Wire port is identical to the DS1994; all functions of the DS1994 are available.

The second port of the DS2404S-C01 is a 3-wire serial interface providing the signals Data, Clock, and Reset for communication speeds up to 2 Mbit/s. The 3-wire interface directly accesses the scratchpad, memory locations and special registers without requiring a ROM command to address the device. For the 3-wire interface the same command codes and transaction flowcharts apply as for the 1-Wire interface; the lasered ROM itself and the commands of the network layer are

not accessible. The arbitration between ports is done according to the method first come, first serve. Housed in a 16-pin SOIC package, the DS2404S-C01 provides a separate open drain IRQ pin for interrupt signalling and a 1 Hz clock output. Depending on the application the device can either operate on V_{CC} from 2.8V to 5.5V with battery backup or on battery only. For further details please refer to the DS2404 or DS1994 data sheet.